

Comparative review of kerosene burners via an assessment of the post-test material allowables of composite panels

Presenter: CTL Ireland -- Supported by Resonate Testing LTD

Point of contact: Tom Mallon TomMallon@TheNacelleGroup.com

Aircraft Systems Fire Protection Session: Fire Research – test methods

Abstract:

Future propulsion grade fire testing is benefiting from the current initiative led by the FAA and supported by the aerospace industry to review of best practice in regard to propulsion system grade fire testing.

While the other studies have looked at equivalency of burners based on burnthrough times of composite panel, this has demonstrated a level of variability and may not adequately evaluate the differing temperature profiles and heat flux outputs of the impingement flame.

This practical/test-based program assesses direct and peripheral impact on material allowables for composite panels when subjected to fire testing at a propulsion grade level.

This study aims to assess if the equivalency of different burners can indeed be understood by the assessment of material allowables at common points within identical composite panels. Can such methods be used to demonstrate the equivalency of the sonic burner? Will the effect of heat on composite panels (and the measured allowables in and around the flame impingement area (pre-and post-test) demonstrate a higher level of repeatability that can be visually observed from the current approach to testing?

The work is to be carried out between two Irish-based test facilities, with CTLs recognised expertise in composite materials and coupon testing in Resonate Testing's expertise and fire testing in order to provide greater understanding of heat affected zone from different burners (Carlin and Sonic)